

# RESULTS OF AN INTERVENTION STRATEGY TO REDUCE LEAD EXPOSURE IN SUSCEPTIBLE POPULATION GROUPS IN COPSA MICA AREA, ROMANIA

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**Background and Aims:** High levels of lead have entered the environment through human activities such as mining, industrial processes and burning fuels.

Studies conducted between 1991 and 2002 focused on lead exposure in children in Copsa Mica area where a primary smelter was processing zinc and lead from mining ores. The results showed an important exposure of the children to lead, impacting somatic development, heme synthesis and neuropsychological development. An intervention program was elaborated and implemented in 2002 in Copsa Mica and blood lead levels (BLL) in children aged 4-15 years were monitored over time to measure the progress along with the intervention.

**Methods:** Data on lead sources, risk factors (playing with soil, putting dirty toys in the mouth, hand washing, cleaning practices etc.), and socio-economic factors were collected using a questionnaire. BLL in children were measured by atomic absorption graphite furnace spectrometry. A social marketing program have been implemented in the investigated area.

**Results:** The mean measured BLL decreased between 2002-2009 from 46 µg/dL in 2002 to 22 µg/dL in 2007 and to 16 µg/dL in 2009. Statistically significant correlations were found between blood lead levels in children and some behaviours/practices/attitudes: dirty hands/toys to mouth behaviour, and the use of the vacuum cleaner to clean the house in 2009.

**Conclusions:** In spite of such a major decrease in BLL (three fold) during a relatively short period of time (2002-2009) and taking into account the huge amount of resources which have been allocated to the intervention program, there is still a great need for work to be done on formulating, elaborating and implementing additional measures along with specific indicators to measure the process and progress of intervention at individual level.